A MODEL INSTITUTIONAL IP STRATEGY

The Scinnovent Centre;

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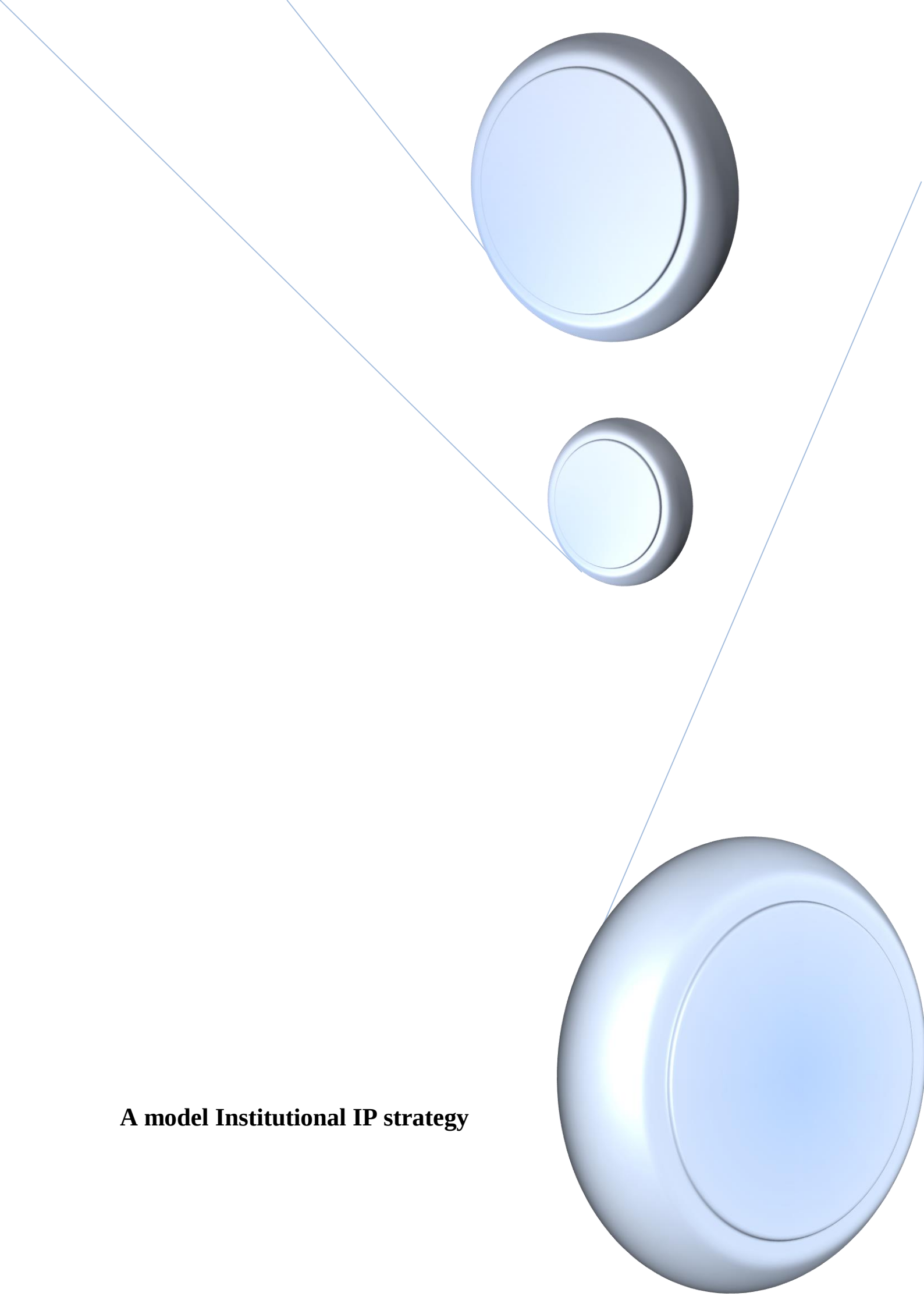

A model Institutional IP strategy

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Acronyms

ABS	Access and Benefit-Sharing
ARIPO	African Regional Intellectual Property Organization (Anglophone)
BIH	Botswana Innovation Hub
CBD	Convention on Biological Diversity
CAN	Competent National Authority
EARO	Ethiopia Agricultural Research Organization
EC	European Commission
EEZ	exclusive economic zone
EPO	European Patent Office
EU	European Union
FDI	Foreign Direct Investment
FTA	Free Trade Agreement
GIGRG	Inter-institutional Group on the Management of GR
GR	Genetic resources
HPFI	Health and Performance Food International BV – a Dutch Company
ICT	Information Communication Technology
IP	Intellectual Property
IP Office – an office in an institution charged with managing IP	
IPRs	Intellectual Property Rights
ITPGRFA	International Treaty on Plant Genetic Resources for Food and Agriculture
JV	Joint Venture
MAT	Material Transfer Agreement
MINEPDED	Ministry of Environment, Nature protection and Sustainable Development
MTA	Mutually Agreed Terms
MoU	Memorandum of Understanding
NARO	National Agricultural Research Organisation (Uganda)
NaSARRI	National Semi Arid Resources Research Institute
NBL	Nile Breweries Limited
NDA	Non-Disclosure Agreement/Confidentiality Agreement – an agreement to keep information confidential
OAPI	Organisation Africaine de la Propriété Intellectuelle (Francophone)
PCT	Patent Cooperation Treaty

PIC	Prior Informed Consent
R&D	Research & Development
RTA	Regional Trade Agreement
S&CI	*Soil and Crop Improvements Company*
SME	Small and Medium Enterprise
SMTA	Standard Material Transfer Agreement
TK	Traditional Knowledge
TRIPS	Agreement on Trade Related Aspects of Intellectual Property
UN	United Nations
UNCS	Uganda National Council for Science
UPIVC	university patent innovation value chain
WIPO	World Intellectual Property Organization
WTO	World Trade Organization

2. ***Definitions***

Access and benefit-sharing – fair and equitable sharing of benefits arising from use of genetic resources

Bioprospecting – is the search for biological resources with actual or potential value for development into potential commercial applications

Biotechnology - means any technological application that uses biological systems, living organisms, or derivatives thereof, to make or modify products or processes for specific use

Contracting party – a party to a treaty that has agreed to be bound by the treaty

Genetic resource – genetic material or plants or animals with actual or potential value (monetary or non-monetary)

Licence – an instrument of complete or partial transfer of ownership of intellectual property from one party to another

Material Transfer Agreement (MTA) – an instrument used to seal a relationship between the source (owners) of genetic material and the user of genetic material. It is a form of contract that details what materials are in question, how they are to be passed on to the user, the benefits that should accrue to the owners, if money is involved – the mode of payment, if non-monetary benefits are involved – the form that such benefits should take, and so on.

Mutually agreed terms (MAT) – terms of an agreement that have been understood and agreed upon by all parties in the negotiations.

IP *intellectual property*. Refers to intangible property that results from creations of the mind, such as inventions; literary and artistic works; designs; and symbols, names and images used in commerce. IP is protected in law by patents, utility models, copyright, trademarks, industrial designs, trade secrets, geographical indications amongst others. This protection is for a specified period of time to allow the inventors/creators earn recognition or financial benefit from what they invent or create

Prior and informed Consent – or free prior and informed consent – it's a process –

- *Prior* – being given the opportunity to collaborate with and provide consent or objections to a project or development before it takes place with enough time to consider the information available and likely consequences
- *Informed*- being given all information needed to decide whether or not to provide or withhold consent to a project or development. Information must be

current, in a language that can be understood, independent, and objective. Access to technical assistance must be available

- *Consent* – giving permission to a particular project or agreement. A community can provide or withhold consent.
- *Researcher* – a person interested in exploring the potential applications of a genetic resource. He ought to seek prior informed consent of the community to carry out commercial or non-commercial research about the properties and potential applications of a given genetic resource.

Technology is science or knowledge put into practical use to solve problems or invent useful tools. This knowledge includes methods, systems, and devices which are the result of scientific knowledge being used for practical purposes. It also describes machinery and equipment developed from the application of scientific knowledge

Traditional knowledge shall refer to any knowledge originating from a local or traditional community that is the result of intellectual activity and insight in a traditional context, including know-how, skills, innovations, practices and learning, where the knowledge is embodied in the traditional lifestyle of a community, or contained in the codified knowledge systems passed on from one generation to another. The term shall not be limited to a specific technical field, and may include agricultural, environmental or medical knowledge, and knowledge associated with genetic resources.

"University patent innovation value chain" means the whole process from scientific and technological innovation knowledge to patent value realization, including three stages: knowledge innovation, applied research and patent commercialization, and a dynamic feedback channel.

3. Interpretation of terms

"Access" means the opportunity to use genetic resources, data from research findings or new technology

"Assignment" means the transfer of ownership of Intellectual Property Rights between the seller (Assignor) and the buyer (Assignee). Where IP is jointly owned, all partners constitute the 'assignor'

"Background Intellectual property" means all IP rights licensed to or owned by project partners at the beginning of the project and may include computer algorithms,

software codes, drawings, notebooks, data and photographs. Use of such background IP in a joint project must be clearly agreed upon and also the ownership of new discoveries, improvements, and IP where background IP was used.

"Benefit-sharing" means the sharing in a fair and equitable manner the research data from a project or the proceeds of commercialization of IP or technology resulting from a research project such as fees for assignment, licensing , joint venture or franchising..

"exclusive licence" means a licence contract that confers on the licensee and, where it is established expressly in it, on the persons authorised by the licensee, the right to exploit the licensed industrial property right to the exclusion of all other persons, including the rights owner;

"Foreground IP". means Intellectual Property that is, or has been created, exemplified or developed (whether in whole or in part) from the Research. In a collaborative environment, this would be the IP that results from the collaborative project.

"industrial property rights" mean rights under patents, certificates of utility models and technovation and registration of industrial designs issued under a relevant law;

"Innovation' means a process through which intangible products, services and or processes are produced from knowledge or results of research thorough creation, diffusion and transformation of ideas.. Such products, services or processes usually represent a new addition or improvement to what already exists in.

"Intellectual property (IP)" means an expression used for any intangible asset that does not exist in the physical. The intangible nature of the design of a water bottle or the contents of a song on a CD easily makes them amenable to imitation. Because of the great monetary value that these intangible goods have the law allows only those who actually own this intellectual property (IP) to use it. Intellectual Property therefore refers to the protection of **creations** of the mind, inventions, literary and artistic works, computer programmes, data, symbols, brand names, images, and designs which have both a moral and a commercial value. **IP** law typically grants the author of an intellectual creation exclusive rights for exploiting and benefiting from their creation.

IP strategy is a plan by a business entity to acquire and use IP relevant to its business model. For example, money transfer technology is ideal for a telecommunications organisation . It adds value to the general business of such an organisation . The acquisition of various designs of cars adds value to a car manufacturer. Further, the

development of drought resistant varieties of crops adds value to a seeds organisation or a biotechnology organisation .

"invention" means a new and useful art whether producing a physical effect or not, process, machine, manufacture or composition of matter which is not obvious, or a new and useful improvement of it which is not obvious, capable of being used or applied in trade or industry; and includes an alleged invention;

"inventor" means the person who actually devises the invention as and includes the legal representative of the inventor;

"licence contract" means a contract or an agreement by which a person grants permission to use his or her industrial property rights, know-how, or other technical information or technical services;

"licensee" means a person licensed under a contract which is registered or taken to be registered under a relevant law;

"licensor" means a party to a licence contract who grants the permission under a contract registered or taken to be registered under a relevant law;

"Memorandum of Understanding " means an agreement between two or more parties that sets out certain rights and obligations. It may not involve direct consideration.

"Ownership" means the rights holder of genetic materials, research data, IP, technology or licence as this may be contained in an agreement or such other document with legal force. Joint ownership is allowed for joint projects.

"Party/parties" means the persons agreeing to collaborate or in any way involved in an agreement of whatever nature such as PIC, MAT, MTA, Assignment and License.

"Person" means a natural person or an organisation or institution where registered or not.

"R & D" means research and development. This could be either primary research or applied research or further research aimed at improving a given IP to make it more marketable.

"Technovation" means developing new ideas, products, services, and processes which exploit technology. At its best, technovation is said to create valuable products and services no one has yet asked for or creates "disruptive" change (major leaps in the way things are done). Most of these technovations are in the ICT sector. Many people are developing Apps for different things such as monitoring contacts of COVID-19 positive persons, baking using given recipes, identifying theft in supermarkets and others.

"Utility model" means any form, configuration or disposition of element of some appliance, utensil, tool, electrical and electronic circuitry, instrument, handicraft mechanism or

other object or any part of the same allowing a better or different functioning, use, or manufacture of the subject matter or that gives some utility, advantage, environmental benefit, saving or technical effect not available in a named country before and includes micro-organisms or other self-replicable material, products of genetic resources, herbal as well as nutritional formulations which give new effects.

Context: Why is this important?

- SGCs fund research through public money/taxes
- These grants/projects generate findings that may have IP/IP assets
- Some of the IP assets so generated may have proprietary value – now or in the future
- Revenue from the commercialization could be re-invested into research and grow the R&D kitty
- While this requires a policy framework, in many countries this doesn't already exist
- Collaborative research/projects require that benefits from such research/innovation projects are accessed and/or shared by partners
- There have been cases where partners have quarrelled and disagreed ; some grown and build new relations/enterprises with other funders/networks or some investors have taken advantage of the policy vacuum to exploit IP without due recognition/acknowledgement or compensation to the IP owners.

4. How to develop an IP strategy:

Introduction

It is recognized that science granting councils (SGCs) are funded from public funds. SGCs then pass on these funds to research and academic institutions or individuals, either competitively or otherwise. The law relating to SGCs takes three main forms, differing from country to country. In the first form, the law allows SGCs to own IP. This is the case with SGCs in Kenya and Uganda. For instance in Uganda, the Uganda National Council of Science and Technology law [1] has assigned the functions of protecting IP, clearance for information on science and technology, disbursement of research funds and transfer of

[1] Uganda National Council of Science & Technology Act Cap 290 of 1990

technology to the SGC (the Uganda National Council of Science and Technology). Bodies such as the National Agricultural Research Organisation (NARO) of Uganda can grant funds to institutions or person but there is no mention of IP. In Kenya, [2] the Kenya National Innovation Agency has the mandate to acquire rights in any technical innovation supported by the Agency or to assign such rights, and to facilitate the grant or revocation of any IP. There are several research institutions recognized under this law.[3]

This means any IP resulting from research funded by SGCs in these countries belongs to the SGCs. SGCs in such countries must work out mechanisms for ownership, licensing, assignment and benefit-sharing with other actors. This form of regulation existed in USA before the Bayle-Dole amendment of 1980. The experience from the USA is that this form of regulation stifled the development of IP and commercialization. The main argument here is that since SGCs are funded by government and are therefore already guaranteed budgetary allocation from the Treasury, they lack the motivation to commercialize IP. In fact, in the USA, SGCs were granting non-exclusive licences for the same IP to many different actors, thereby making it unprofitable to commercialize. Universities and research institutions did not have proprietary rights over IPs. Overall, there were too few IPs being registered and far fewer reaching the commercialization state. SGCs under this form shall henceforth be referred to as Model I.

The second form of regulation is where the SGCs fund research and academic institutions (including individuals), but the research/academic organisations are allowed to own, licence and assign IP. This is the model currently in operation in the USA after the 1980 amendment. Under this model, research institutions and universities are allowed to own IP from federally funded projects. They are also required to share proceeds of commercialization with inventors. They are allowed to give exclusive licences or to assign IP. Universities and research organisations are required to avail information from non-commercialized IP to other universities and research institutions on reasonable terms. Most importantly, Universities and research institutions are allowed to keep proceeds from licences and assignments and to plough it back to research. Academic and research institutions therefore have sufficient motivation for additional funding. After 1980, in the USA, there was an exponential growth in the number of IPs registered and licensed by the

[2] Science, Technology and Innovation Act No 28 of 2013 ss 28 & 29

[3] These include: Kenya Medical Research Institute, Kenya Trypanosomiasis Research Institute, Kenya Agricultural and Livestock Research Organisation, Kenya Forestry Research Institute, and Kenya Marine & Fisheries Institute.

research and academic institutions. SGCs under this form shall henceforth be referred to as Model II.

There is a third form that takes a hybrid of the first two. In this form of regulation, SGCs both fund and also carry out research on their own. This is well exemplified by the Council of Scientific and Industrial Research (CSIR) set up by the Scientific Research Council Act [4] and the South African Medical Research Council (SAMRC).[5] CSIR has authority to enter into agreements, establish a company, avail technological expertise to any person, undertake research and carry out transfer of technology. SAMRC has similar functions. It is noteworthy, that indeed in South Africa, many Universities have set established IP policies and set up IP offices. In this model, both SGCs and the funded institutions are allowed to own, licence and assign IP. This shall henceforth be referred to as Model III.

The following should be considered when setting up an IP strategy:

4.1. Consider the nature of your organisation.

4.2. Establish guidelines for creating intellectual property

4.3 Analyse your competitive advantage and barriers to entry. ...

4.4 Analyse third-party interactions. ...

4.5 Audit your intellectual property.

4.6 Where to protect your IP

4.7 Other considerations

4.1. Consider the nature of your organisation.

Model I SGCs have authority to own, licence and assign IPs generated from their funded research. Such SGCs must put in place agreements with the receiving institutions and individuals regarding ownership of IP, Non-disclosure Agreements (NDA), Material transfer

[4] No 46 of 1988 (amended by Act No 71 of 1990)
[5] South African Medical Research Council Act No 58 of 1991

agreements (MTA), Mutually agreed terms (MAT), guidelines on publications and so on. Even where the research or academic institutions source for materials, the manner of benefit-sharing contemplated in an MTA and or MAT must indicate the pre-eminent position of the SGC as the 'owner' of all resultant knowledge from the research. Should academic institutions develop their own IP policies, the contents of such policies cannot contradict the statute establishing the funding agency.

Model II SGCs have 'devolved' their ownership of IP to research/academic institutions. These SGCs should require of research and academic institutions they fund to have a robust IP policy in place and make the availability of such policies a condition precedent for funding. Under this model, SGCs should provide guidelines on what they want to be contained in the policy. Government recoups their investment through taxation of commercialized IPs.

Under Model III, SGCs can own, licence and assign IP, in addition to their funding role. These SGCs need to put IP policies in place to guide management of IP in their own organisations, and to require research/academic institutions to also have reliable IP policies in place.

4.2. Establish guidelines for creating intellectual property

Model I and Model III SGCs as well as the research/academic institutions ought to establish guidelines for creating IP. Such guidelines should cover two main areas. Firstly, guidelines on optimizing searches on patent databases. In order to register a patent, an inventor must disclose details of his or her invention. Patent databases therefore reflect a repertoire of inventions already existing. Systematic searches of such databases can help avoid duplication of effort and waste of public resources. Registration of a patent blocks any other registration of a similar invention. Coming up with an already patented invention does not do justice to the researchers, their institutions or to SGCs. Such data searches can help in identifying gaps in the knowledge where research is needed. Searches on patent databases save an organisation time, effort and resources. Or worse still, after a lot of investment, it could turn out that the organisation cannot enjoy the desired monopoly through registration of IP. This also means that 'frontline' staff should be empowered to conduct searches. This applies with equal force to searches on databases of other IPs such as plant varieties and trademarks. Model II and Model III SGCs can require recipients of their funds to have guidelines on patent searches.

Secondly, guidelines are needed on IP registration. Decision making needs to be optimized. A delay to decide on registration of IP could as well mean that someone else comes up and registers what the organisation may have been considering working on. All SGCs must have a team of officials dedicated to matters of IP. Many SGCs focus too much either on science and technology or on funding that IP has been neglected. Many do not have IP offices with relevant qualified staff in place. Research/academic institutions are not fairing any better. Our institutions need to make a deliberate move to harness and exploit IP.

4.3 Analyse your competitive advantage

Some SGCs like the CSIR - and research/academic institutions they fund - are focused on technology and the production of utility models and industrial designs. In the process, they may also produce some patentable knowledge. Others like the South African Medical Research Council and its affiliates are keen on medical research. Model I SGCs like Uganda's National Council of Science and Technology and Kenya's NACOSTI provide funding to research in all fields. Each SGC needs to analyse and understand its competitive advantage. This helps in channeling resources only to those areas that are close to the organisation's remit.

Recipients of research funds also need to do likewise. Recipients such as the Uganda National Agricultural Research Organisation and Kenya's KALRO have a focus on agriculture research while the Kenya Marine and Fisheries Research Institute has marine resources as its main area of operation. In the academic arena, Nigeria has over 100 Universities, South Africa about 25 and Kenya about 70. All these universities seek funding for research. Almost all of them have duplicate departments, e.g. subjects like History, agriculture and Physics are taught at more than 40 of the 70 Universities in Kenya. The same scenario plays itself out at universities in other countries. It is particularly useful for academic institutions to identify their key priorities and focus on IP in those areas. This scenario also portends well for collaborative work so that experts at three to four universities can get together to work on one project.

4.4 Analyse third-party interactions.

Science Granting Councils and receiving institutions need to analyse how they interact with thirds parties. Third parties can include employees, suppliers, contractors, customers, partners, and potential infringers. Your IP policy should clearly define these relationships.

Employees

Employees can have clauses in their employment contracts on how IP matters relating to the organisation are to be handled. Where an employee is in possession of 'trade secrets' or has come up with an innovation the manner of 'benefit-sharing' must be clear. An organisation will do well to put in place an award scheme for employees to contribute to the creation and maintenance of IP. Key persons involved in IP ought to have enhanced personal insurance as they are potential contributors of a lot of revenue to an institution.

Labour mobility

Problems tend to arise where researchers are from an institution and funding comes from outside. Or some researchers change institutions while a project is going on. Matters of ownership of genetic resources (where used), IP, access to and transfer of technology ought to be addressed as well. What of a case where research funds are managed by institution A and the researcher transfers her services to institution B? The employee contract should always include clauses on how to handle research funds and IP in case of a separation.

Winding up

Funding of a research project may involve infrastructure upgrade, purchase of equipment such as computers, laboratory equipment, publishing machines, and motor vehicles. Questions arise for example, at the end of a research project which involved purchase of motor vehicles – whose vehicles should they be? There are cases where Principal researchers have taken possession of such vehicles, computers have been shared and questions of further use of upgraded facilities go unanswered. All this must be clearly addressed in a constituitive agreement, preferably before a project starts. For SGCs, this should be spelt out in the 'Letter of Grant' of research funds.

Succession planning

An oft forgotten aspect is one of succession planning. Employees in an organisation will always leave for varied reasons. It is good for the organisation that work should be able to proceed even in the absence of any one or several key persons. The use of non-disclosure agreements (NDA) helps to prevent 'leakage' of vital research information. Any leakage of such documents can lead to loss of a competitive advantage.

Documentation/inventory

An organisation ought to preserve very well all documentation protocols. They come in handy where there is need for evidence of having carried out activities towards the invention. Besides, they contain data that can constitute 'trade secrets'.

Continuity plan

Science granting councils should ensure there is a continuity plan in place either in their organisations or in the organisations they fund. To this end, it is necessary to ensure sufficient and properly designed agreements relating to development of the research and further steps with all collaborators, including visiting scholars/researchers.

4.5 Audit your intellectual property including an audit of research data.

The IP policy should make provision for periodic IP audits. Identify and keep an inventory of IPs and potential IPs developed by the organisation. An IP audit should include a schedule of registered intellectual property including patents, trademarks, design registrations, and plant variety rights. Also keep a record of unregistered assets such as know-how, copyright and even 'collections' which can give a competitive advantage. It is important to identify conditions of use such as a license to use intellectual property for research purposes only, or a license to be negotiated for commercial purposes. Also to be checked is the scope of protection.

An IP audit should help to determine

- gaps in protection,
- risks, particularly in terms of internal systems, ownership and conditions of use,
- opportunities as current IP protection may be broader than the current business model, and
- Whether you are spending money on dead wood.

Many Universities and research institutions churn out a lot of research data annually. Some is used for publications while most of it is left to gather dust in libraries. A regular audit of such data could disclose information that can lead to the creation of various IPs. Many such institutions do not have an IP office. In this day and era when income from student fees and or the exchequer is continuously shrinking, it is necessary for all such institutions to set up and properly staff such offices in order to develop IP as another stream of income.

4.6 Where to protect your IP

Different countries have different offices for the protection of IP. All the countries have different registries for various IPs. For example, there is a registry for copyright; a separate one for patents, industrial designs, utility models, and trademarks, geographical indications; and a separate registry for plant varieties. The law considers IPs as private property. So the owner must be proactive. Enforcement can be achieved through litigation, deterrence and registration.

4.7 Other considerations

Where an SGC or any of its affiliates is involved in commercialization of IP, other considerations come into play. Competition has the effect of diluting the value of IP. Where research brings out similar information about an invention that is a probable competitor to what an organisation already has, it may be advisable not to file any IP protection but instead put into the public domain. One can focus on first mover advantage; build a brand loyalty and customer base. Technical aspects can be protected through patent protection on technical aspects key to product base, ability to shut competitors out. Focus can also be placed on Brand Value through trademarks and/or Copyright.

5. Content of Intellectual Property

Types of IP include Patents, Copyrights, Trademarks, Service marks, Trade secrets, Industrial designs, Geographical indications, and plant varieties.

Model I & III SGCs – these also own and can licence/assign IP

These SGCs will be concerned with all IPs. Most Science Granting Councils tend to focus on patents, industrial designs, utility models, trademarks, and computer programmes. Although some of these scientists are involved in publications, hardly do they consider the 'sale' of books written by scientists as valuable copyright being 'commercialized'. This needs to change to accommodate other forms of IP. Some of these SGCs grant research funds to other areas other than the 'sciences'. This means, such SGCs should have broader policies that accommodate IPs. Trade secrets permeate mainly research from

Model II SGCs – these do not own IP

These merely fund research/academic institutions. They should therefore insist that recipients of their funds have policies that cover all IPs.

Research institutions

Most research institutions are specialized. For example, the CSIR of South Africa and related institutions elsewhere, deals with research that can result in patents, utility models, industrial designs, trademarks and copyright (for computer programmes). Uganda's NARO and similar organisations elsewhere focuses on agricultural research. Here the likely IPs are patents, trademarks, trade secrets and new plant varieties. Research from Kenya's Medical Research Institute and similar institutions is likely to result in patents, trademarks and copyright.

Academic institutions

Academic institutions engage in a very broad range of research cutting across many disciplines from the sciences through the arts and cultural studies. These are the institutions into have capacity to embrace all forms of IP. Nevertheless, there is very little cognisance of IPs related to music, drama, books and cultural expressions. Indeed, one area that seems to be gradually gaining attention is traditional knowledge- a form of communally owned IP.

6. How do I protect my IP?

Some IP rights arise automatically as soon as the work is created. These are copyright, database rights; design right, rights in passing off, and some rights in confidential information. Rights in patents, utility models, registered trademarks and registered designs can only be obtained by application to the Intellectual Property office. Intellectual property rights are national rights; one must ensure that the registrations cover all the countries where protection or trade is sought. Some inventions can be better protected through trade secrets which is a cheap and efficient way to do so (like Coca Cola does), but it's also risky. Trade secrets can also better enjoy protection with the aid of non-disclosure agreements.

IP can also be protected through registration and defensive publishing**.** Defensive publishing can also protect against two kinds of actors: those which apply for patents solely to collect license fees or damages; and those who patent incremental improvements around the core patent to erode its value and take over.

7. How to create and use intellectual property:

In order to create and use IP, there must be an IP policy, IP strategy, Relevant agreements, Capacity building, an inventory of data/records of IPs, guidelines on third party interactions, partnerships and interactions, licensing and assignment, incentives and rewards.

a. An IP policy

Many institutions in Africa have neither embraced nor benefitted from IP. In order to properly benefit from IP, there is need for each institution to set up an IP policy. Such policy provides for management of IP within an institution, including the office directly concerned with IP. The policy will guide members of an institution on their rights and obligations as well as procedures to follow in realizing their IP. A policy provides for the manner of sharing of benefits of commercialization arising from an IP developed from the institution. Thus, an IP policy builds confidence in the members regarding their participation in the development of IP.

b. Capacity building

Capacity building in matters of IP helps to gain support of employees in the implementation of an IP policy. Such employees learn to feel they are appreciated. These employees in turn propagate an institution's IP policy in collaborating with others.

c. IP Strategy

There is need to develop a strategy to create, protect and exploit IP. Such strategy must of necessity include an IP policy already referred to above. As part of the strategy is to map out an institution's strength so that resources are properly channelled.

d. Inventory of data and records

Define how the results will be owned, protected and used. The MoU used to set up a research project or other instruments such as the MTA should contain MAT that specify ownership of results and how they are to be disseminated and or used. Keep your scientists' lab-books and log when inventions and designs are made, what they are, and who made them. Accurate record keeping and keenness on records is very important in managing IP. One can monitor use of the data, isolate and keep secrets, determine when data is released for publication and when to produce it as evidence in disputes on IP. Keep inventions, designs and ideas secret

until you decide to patent or register them (or to keep them secret longer). It is important not to announce results of studies that form the basis of an IP claim beforehand. An early announcement can nullify any claims for IP, especially patents. Use the grace periods available before or during the application process to maintain secrecy. Secrecy is key, especially in relation to patents. Researchers should avoid rushing to present results of their findings at conferences, before a patent is registered. Register relevant domain names. Domain names that relate to a business need to be registered. Identify trade secrets that are so valuable that you never disclose them, even under confidentiality obligations A non-disclosure agreement or also called a confidentiality agreement can be used to bind staff, consultants, business partners and other third parties. Trade secrets are a powerful way of protecting IP, if properly done. An institution would do well to guard her trade secrets. Apply for registered trademarks for new brands. Where brands have been created – the same should be protected through trademarks. Registering an IP early gives the inventor a head start. The law protects a person's rights according to priorities. However, depending on the nature of the invention, a delay in registration or non-registration is also a way of protecting an invention through 'trade secrets'. Trade secrets can guarantee longer protection than other forms of IP. A register of IPs an institution owns helps to guide an institution on when some may be due for renewal of subscription, completely lapsing, which other areas to work on IP, and to know its areas of strength.

e. Incentives for staff

Create incentives for staff to create patentable inventions, registrable designs and protectable copyright. Incentives for staff make staff work more. Such incentives can be built in the IP policy.

f. Partnerships and cooperation

Partnerships work well where it is necessary to share personnel, facilities and equipment. It does happen that some specialists are found in research institution that are not available in an academic institution, or that one institution is better equipped for certain scientific enquiries than the other. Identify strategic partners with whom to create IP. Such partners could include other institutions, researchers or other people with the requisite skills. One should choose partners that have a broad international reach in order to maximize from the commercialization. Ensure consultants transfer to you the

intellectual property they create for you. Where an institution has hired specific consultants for purposes of working on defined projects, IP should be transferred to the institution under certain MAT. Involve the right people at the genesis of IP to prevent a lot of heartache later on. The right people get things done the right way. Sometimes some people are placed in certain offices as a political favour. Others are placed in the wrong positions based on other considerations.

g. Licensing and Transfer

Licence IP to earn royalties and to gain access to new markets. IP can be licensed exclusively or partially. An exclusive licence amounts to transfer of IP rights to another entity. A partial licence can be limited to a certain territory. Cross-licence to others to reduce licensing fees. Cross-licensing is a technique for cutting costs. This involves seeking out partners in whose markets one does not want to venture and who might find venturing in your market very expensive. It is a form of exchange of licences. Be sure to meet your obligations under any agreement in IP. Diligence is required in fulfilling obligations under IP. There should be a record of all prior identified beneficiaries and a formula for sharing the proceeds of commercialization.

8. Issues in Sponsored Research

Academics rely on research funding to do what they are good at. Some organisations like the Kenya Innovation office claim copyright for their sponsored projects. In most collaborative research with researchers from the West, they come with 'Form' or fixed agreements that are difficult to vary. Some researchers in Africa get overly excited at the prospects of being participants in such project that they do not check the IP clauses in the agreements. The institutions they come from could have their own IP policies, which largely vest IP rights in the institution. A conflict is likely to arise where the IP requirements of the sponsoring agency is at variance with that of the institution to which the researcher belongs. In case of 'independent' contractors – a dispute is likely to arise in ownership of IP between him and the sponsor. There is therefore need for comprehensive agreement(s) amongst the actors which should specify among others-

- A description of deliverables

Each party to a sponsored research should know what is expected of them. For example, the sponsor of a research should indicate how disbursement of funds will be done, i.e. a lump sum send to the cooperating institution or in instalments. The researcher should

know what she is supposed to do in order to access the funds. The cooperating institution should also have clear guidelines on how it is supposed to act in such an arrangement. Similarly, if there are consultants involved, duties, obligations and rights should be specified.

- *Definition of the scope of the project and payment*

Clearly define the scope of the project. For example, it is necessary to limit the scope in order to guide researchers on the boundaries within which they should operate; should new and interesting information emerge, can the project be extended? In terms of payment, it should be very clear who manages the research funds and how they are to be disbursed.

- *Option to Assign or License IP*

Assignment of IP is the legal instrument for transferring, say a patent, from an inventor to a business. It is an agreement in which the inventor, now called the 'assignor' transfers all or part of their right, title and interest in a patent or patent application to the 'assignee', usually a commercial entity.

Licensing refers to the act of assigning the ownership of an IP to a third party such that to make, use and sell your invention either exclusively or non-exclusively, for an amount of pre-decided royalties.

Whether one assigns **all** or **part** of their right will be determined by commercial considerations.

- *Restrictions in the use of genetic resources or technology that has IP*

Where there are restrictions in the use of genetic resources as expressed either in a PIC or MTA, then should a need arise for other uses, the processes of PIC and MTA have to be redone.

- *Ownership of IP*

This needs to be agreed upon beforehand. Sometimes scientists, especially from the West engage in acts that are described as 'biopiracy'. They get genetic materials based on traditional knowledge and patent inventions therefrom without any reference to the local communities. Such patents can be revoked. In the case of a patent registered by a Dutch company in respect of Teff, a cereal that Ethiopians have used for centuries as food and which, unlike wheat and rye does not contain glutamine, the agreement for the transfer of

materials was not clear on ownership of IP. However, the patent registered was eventually revoked in the Netherlands. But it became very expensive for Ethiopia to fight for revocation throughout all the EU countries.

Turmeric Patent

Turmeric is a tropical plant grown in east India. Turmeric powder has been used for centuries in India as a medicine, a food ingredient and a dye. As medicine, it is used as a blood purifier, in treating the common cold, and as an anti-parasitic for many skin infections. In 1995, the University of Mississippi medical centre was awarded a patent on turmeric for wound healing properties. The Indian Council for Scientific and Industrial Research (CSIR) objected to the patent granted. Therefore, the USPTO revoked the patent agreeing that the use of turmeric was an old art of healing wounds known and used in India.

Neem Patent

The neem tree is legendary to India, from its roots to its spreading crown; the Neem tree contains a number of potent compounds, notably a chemical named *azadirachtin*. It is used for medicinal purposes in so many fields. The barks, leaves, flowers, seeds of neem tree are used to treat a variety of diseases ranging from leprosy to diabetes, skin disorders and ulcers. Neem twigs are used as antiseptic tooth brushes since time immemorial. The patent for Neem was first filed by W.R. Grace and the Department of Agriculture, USA in European Patent Office as a method of controlling fungi on plants a Neem oil formulation. India, through the New Delhi-based Research Foundation for Science, Technology and Ecology (RFSTE), in co-operation with the International Federation of Organic Agriculture Movements (IFOAM) and Magda Aelvoet, former Green Member of the European Parliament (MEP) .filed an opposition to the patent. India proved that neem seeds were known and used for centuries in India, both in curing dermatological diseases in humans and in protecting agricultural plants from fungal infections. The European Patent Office (EPO) cancelled the patent. Also, US patents on Neem-based emulsions and solutions were cancelled.

Basmati patent

Basmati rice is aromatic rice grown in India and Pakistan for centuries. It is the staple food of people in most parts of Asia, For centuries, the farmers in this region developed, nurtured and conserved over a hundred thousand distinct varieties of rice to suit different tastes and needs. In 1997, in its patent application, Ricetec, a US company claimed that it had invented certain "novel" Basmati lines and grains "which make possible the

production of high quality, higher yielding Basmati rice worldwide." This patent was cancelled.

- *ownership of equipment purchased*

The MoU and any other agreements between the funders and the institution/researchers should specify ownership of any equipment bought with research funds. It is not uncommon that institutions have experienced difficulties with respect to motor vehicles purchased specifically for the project. It becomes even worse where the researchers involved come from different institutions, or even transfer to other institutions.

- *Obligations relating to prior informed consent (PIC), Mutually Agreed Terms (MAT), and Material Transfer Agreements (MTA)*

A keen eye must be kept on the above agreements. This is more so important where foreign researchers are involved and who may want to 'run away' with intellectual property rights.

- *Confidentiality of information*

Scientists normally get excited when they generate new data – especially if it appears to be novel. However, rushing to publish such data either at a conference or in a journal would negate any patent application based thereon. It must be clearly stated how data generated from the research is to be handled, especially its dissemination. There may be need to delay publicity around results until a patent application has been approved; there may be need to keep certain information confidential for commercial purposes. Rights to the use of research results including data should be specified. Clarifying use of research data can also protect institutions from legal liability as a result of the use of the Material or any results obtained. When and the form publications should take ought to be specified.

There can be a challenge with collective ownership of information/expertise where one proposal is generated by several people and a project is funded. Sometimes researchers disagree on who owns the knowledge in the proposal. Also some researchers may abandon a project after having made a distinctive contribution. In certain cases, some researchers may be initially involved and then their names are deleted from the list of researchers on the final proposal. All these aspects must be clearly set out. It helps to get the scientists to sign non-disclosure agreements. In cases where some are left out – there should be a clear procedure for dispute resolution both in the agreement and at institutional level.

- *Funding institutions*

There are challenges around Funding institutions. For example, they receive a lot of applications but only fund some. How do you protect the knowledge of those not funded? The people reviewing applications for funding are normally specialists in that field. How can the 'rejected' applications be protected from 'plagiarism'? A Funding institution ought to have very clear rules binding it and its reviewers. Furthermore, there must be a policy of non-use of 'rejected' applications, and further, there should be a policy of 'returning' applications not accepted for funding. However, the researchers themselves must be vigilant that their proposals are not 'stolen' by other researchers. It is advisable that a funding institution publishes all the topics submitted for research and then those accepted for funding.

In some cases, a funding institution may give out a call for proposals when it has already predetermined whom to fund. In such a case, they could easily take a proposal from one person and pass it onto their preferred candidate. Once again, a funding institution must be as fair and as transparent as possible. Additionally, those submitting proposals ought to be vigilant to prevent theft of their work.

In the matter of *Kukali v Ogola* [6] the plaintiff (Kukali) had done and completed her Master's thesis at Maseno University. The defendant (Ogola) was her friend and enrolled at the University of Nairobi for a Masters in the same field. The defendant borrowed the plaintiff's work to read and seek some 'guidance'. Instead, she reproduced it both at proposal and final level. The plaintiff found out and sued both the defendant and the University of Nairobi. The plaintiff asked the court not to allow the defendant to graduate using the 'plagiarized' material. The University was barred from graduating her using that project.

In order to avoid reputational risk and loss of confidence in it, a funding body should strictly adhere to its own set guidelines with regard to funding research.

- *Dispute resolution mechanism.*

Disputes are certainly likely to arise where people contract or agree to do something. Even if none of the parties is in the wrong, for example, in the case of Force majeure, the rights of the parties must be clearly spelled out. Consider the case of the Corona virus pandemic – many agreements got frustrated without any of the contracting parties being in the wrong. Schools and colleges were closed even when students had paid fees, businesses were forced closed although they had valid licences to operate, supply contracts involving transportation could not be fulfilled or at least not on time due to curfew or 'lockdown'

[6] [2010] eKLR (HCt),

impositions, and so on. It is therefore necessary for all collaborating institutions to provide for dispute settlement in their agreements. Such a mechanism should specify in which country and using which laws a dispute shall be resolved. With respect to research related contracts, it is advisable to consider alternative methods of dispute resolution in the first place such as negotiation, mediation and arbitration. With respect to arbitration, it should be clearly stated how many arbitrators are to be used and which law is to be applied, together with the venue for arbitration. Courts will normally respect such attempts before they entertain a complaint.

9. Management of IP at a Research/Academic Institution

For a long time, many academic institutions did not bother with IP. They focused on the slogan 'publish or perish'. As a result, a lot of material was published which besides decorating the CVs of the researchers were left to gather dust in many libraries. Researchers in the basic sciences in the West were and get awarded with Nobel Prizes. In the developing world, the state of technology (equipment) is so poor that it is near impossible to nurture a dream of a Nobel Prize. With respect to research institutions, funding is usually so low that researchers in these institutions remain relevant by collaborating with those from the West who bring along funding. In this arrangement, local researchers more often than not hardly bother with IP issues. In some instances, these researchers are only 'used' to validate what has been found elsewhere. This is the more so true in clinical trials and biotechnology research in agriculture.

However, a major contributory factor to the low regard for IP in Africa is lack of information or awareness. The awareness of IP is so low so that IP is hardly a criteria for promotion in our academic and research institutions. Nevertheless, the idea of IP is slowly catching up in many research and academic institutions in Africa. Many have woken up to the potential financial outcome of commercializing IP. Many institutions are interested in pursuing this line but they do not know how.

There are three major steps that ought to be taken. Firstly, an institution should set up an IP policy to guide all matters of IP. Secondly, all members of the institution must be sensitized to the IP Policy. In fact, the draft IP policy should be given to members of the organisation to brainstorm on it as a way of sensitization and increasing awareness, aside from providing an opportunity for ownership. Thirdly, an institution should set up an IP office to manage all forms of IP (see Schedule I)

Research and academic institutions generate a lot of knowledge some of which could qualify for protection as intellectual property. The flip side of this is that most such

institutions do not have offices for intellectual property. The few that have set up such offices have challenges with staffing – ranging from budgetary constraints to lack of appreciation of which skills to hire for such offices.

The skills to be hired should be dependent on the functions of such an office (see Schedule I). The functions include –

(i) Receiving materials for consideration for IP registration such as books, research results, new plant varieties, computer programmes, and designs;
(ii) Preparing/Processing PIC, MTA, MAT, MoU, NDA and other agreements;
(iii) Sensitization of IP in the institution;
(iv) Registration, Assignment and licensing of IP;
(v) Commercialization of IP; and
(vi) Administration of benefit-sharing agreements

Clearly, function (i) requires multiple skills such as scientists, computer experts, and agriculturalists. These can be too many to hire. However, an institution can make use of specialised *ad hoc* committees for various fields to achieve the desired end. Functions (ii)-(vi) would require lawyers who are specialized in intellectual property rights law. However, function (v) could also require marketing skills. If an institution is well resourced, it could assign at one person with requisite expertise per function. Add on one or two administrators and the office of intellectual property will be up and functional.

SCHEDULE I

MANAGEMENT OF IP AT A RESEARCH/ACADEMIC INSTITUTION

(Moni Wekesa, 2020)